

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/476,776	12/30/99	SHIOMI	T SON-1688

WM01/0508

RONALD P KANANEN ESO
RADER FISHMAN & GRAUER
THE LION BUILDING
1233 20TH STREET NW SUITE 501
WASHINGTON DC 20036

EXAMINER

CHU, K

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 05/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/476,776	SHIOMI ET AL.	
Examiner	Art Unit		
Kim-Kwok CHU	2651		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Amendment filed on 2/15/01 .

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____ .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

18) Interview Summary (PTO-413) Paper No(s). _____ .

19) Notice of Informal Patent Application (PTO-152)

20) Other: _____ .

Response to Remarks

1. Applicant's Remark filed on February 15, 2001 have been fully considered but they are not persuasive.

(a) Applicant points out that Takizawa does not necessarily has a tilting control circuit (Remark, page 3, lines 17-19). In fact, a typical tilting mechanism needs a control circuit because the inclination of tilting an optical pickup is cannot be manually controlled. Accordingly, Takizawa uses a tilting motor 55 which is driven by a titling signal from the tilting detector means 40. As well known in the art, the tilting motor requires a control circuit so that the tilting signal can be converted to a motor speed control signal;

(b) Applicant points out that his invention claims the elimination of a tilt sensor and Takizawa requires a tilt sensor 40 to operate a motor. According to Applicant's disclosure, on page 39 of his specification, lines 5-15, Applicant states that "the inclination amount of the optical disk 33 can be detected" by comparing a laser beam's return time. Although Applicant does not disclose how the laser beam is detected, it is well known that his laser beam is detected by a light sensor. Therefore, Applicant's invention requires a light detecting/sensing means to provide his disk's inclination information.

Even Applicant's light detecting means that provides tilting information is not labeled as a tilt sensor, it is still be considered as a kind of tilt sensing device. In other words, as long as Applicant needs a light detecting means to detect whether his disk is tilted or not, Applicant can not state that his invention does not require a tilt sensor; and

(c) on page 4, line 11, Applicant states that claims 14-20 depend on patentable claim 1 or 8. However, claims 14-20 depend on the independent claim 13 which is rejected in the Office Action dated October 25, 2000.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. Patent 5,311,497) further in view of Sugiura (U.S. Patent 5,027,336).

Takizawa teaches an optical disk tilting mechanism having means and steps very similar to that of the instant invention.

For example, Takizawa teaches the following:

- (a) a spindle chassis for rotationally supporting a turntable on which an optical disk D is placed (Fig. 2);
- (b) a pickup chassis rotationally supported on said spindle chassis, for movably supporting an optical pickup device 37 (Fig. 2);
- (c) said pickup 37 being movable toward and away from the turntable (Fig. 2);
- (d) a title mechanism for adjusting tilt angle of said optical pickup device to a neutral position (Fig. 2; column 12, lines 40-42);
- (e) a stepping motor for rotating said pickup chassis with respect to said spindle chassis (Fig. 2, column 13, lines 29-30);
- (f) as in claim 8, a first chassis assembly 8 (Fig. 2);
- (g) as in claim 8, a second chassis 4 rotationally supported on said first chassis;
- (h) as in claim 10, a stepping motor (Fig. 2, column 13, lines 29-30);
- (i) as in claim 11, a cam engaged with said stepper motor and a spiral surface 44 mechanically engaged with said second chassis assembly 4 (Fig. 6; a cam is an inherent feature where a motor use it to drive other components);
- (j) as in claim 13, rotating a drive unit in a first

direction until the tilt mechanism reaches a predetermined reference position (Fig. 2; inherent feature because tilt position is predetermined and not random); and

(k) as in claim 13, rotating the drive unit in a second direction opposite to the first direction, a predetermined number of rotations thereby positioning the tilt mechanism to the predetermined neutral position (Fig. 2; inherent feature where tilt angle cannot be set at one time but in a damping motion).

However, Takizawa does not teach the following:

- (a) a control circuit for driving said stepping motor to set tilt angle at a predetermined neutral position;
- (b) the control circuit does not require a tilt sensor
- (c) as in claim 9, said control circuit having memory storage;
- (d) as in claims 2-7 and 13-20 said control circuit drives said stepping to various positions such as neutral position, reference position etc. and then store it;
- (e) as in claim 12, a protrusion extending from said second chassis; and
- (f) as in claim 12, a biasing device attached to said first chassis.

Sugiura teaches an optical pickup where the tilt adjustment does not require a tilt sensor (Fig. 4).

Although Takizawa does not disclose a motor control circuit, it is well known that motor control circuit is a necessary device to control a motor. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention of use a motor control circuit in Takizawa's disk tilting mechanism in order to drive his titling motor, because the control circuit has the advantage of controlling the speed and direction of the motor's rotation.

On the other hand, when there is a motivation to decrease the size of an optical pickup, for example, to simplify its components such as to reduce the number of light sensing means, it would have been obvious to one of ordinary skill in the art at the time of invention to use Sugiura's tilt signal from a light detector instead of Takizawa's tilt signal from a tilt sensor, because Sugiura's tilt signal do not require an additional light sensing means.

Furthermore, although above item (c) to (f) are not taught by both Takizawa and Sugiura, they are not novel. For example, a typical tilting mechanism to set a titling angle on a pickup must have various positions such as neutral, reference etc. so that the control circuit knows its present position and a preferred position going to be adjusted.

In addition, the applicant has not disclosed that any specific positions adapted by his tilting mechanism overcome

any deficiency in the prior art or as for any stated purpose.

The examiner takes Official Notice of this teaching as being known to these of ordinary skill in the art.

Furthermore, electrical and mechanical components such as memory, protrusion means and biasing means are not novel in a tilting chassis and its control circuit. They are design choice of parts to achieve a tilting angle. And besides, Applicant has not disclosed that any specific parts adapted by his tilting mechanism overcome any deficiency in the prior art or as for any stated purpose. The examiner takes Official Notice of this teaching as being known to these of ordinary skill in the art.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

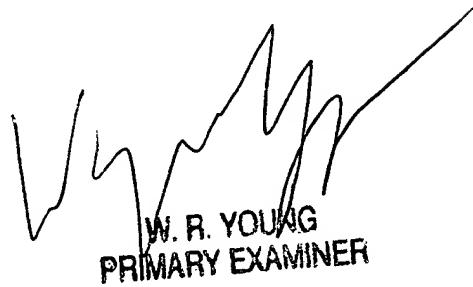
Kusano et al. (5,206,848) is pertinent because Kusano teaches an optical head having a tilt servo control without using a tilt sensor.

Furukawa et al. (JP 11-003531) is pertinent because Furukawa teaches an optical head having a tilting control means with no tilt sensor.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action

10. Any response to this action should be mailed to:
Commissioner of Patents and Trademarks Washington, D.C.
20231 or faxed to:
(703) 305-9051, (for formal communications intended for
entry) or:
(703) 305-9731, (for informal or draft communications,
please label "PROPOSED" or "DRAFT")
Hand-delivered responses should be brought to Crystal Park
II, 2021 Crystal Drive, Arlington, VA., Sixth Floor
(Receptionist).
Any inquiry of a general nature or relating to the status
of this application should be directed to the Group
receptionist whose telephone number is (703) 305-3900.
Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Kim CHU
whose telephone number is (703) 305-3032.



W. R. YOUNG
PRIMARY EXAMINER

KK 4/25/01

Kim-kwok CHU
Examiner AU2651
April 25, 2001

(703) 305-3032